4. Alignment and Adjustments

4-1 Adjustments

4-1-1 General Alignment Instructions

Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as vertical size, horizontal size, and focus. Observe the picture and check for good black and white details. There must be no objectionable color shading: If color shading is present, demagnetize the receiver. If color shading persists, re-do purity and convergence adjustments.

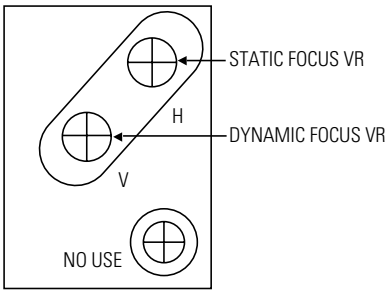
Note :
1. This '4. Alignment and Adjustments' applies to KS4A chassis applications.
2. AC Power Supply: 100~230 V
3. This service manual has been written on the basis of domestic remote-control model adopting KS4A chassis. Depending on sales location and product specifications, some of specifications herein may be changed.

4-1-2 Focus Adjustment

KS4A contains a dynamic focus circuit. When CRT PCB, FBT or CRT is replaced, be sure to adjust in the following sequence:

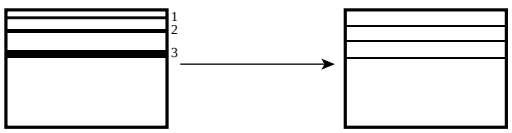
Dynamic Focus Adjustment

1. Input a crosshatch pattern.
2. Select "Standard" from the menu,
3. Turn the Static Focus VR clockwise to set it to its maximum.
4. Turn the Dynamic Focus VR counterclockwise to set it to its maximum.
5. Turn the Static Focus VR counterclockwise slowly for the clearest center vertical line.



<FBT FOCUS PACK>

6. Turn the Dynamic Focus VR clockwise slowly for the clearest third line.



7. Check for the FOCUS of entire screen. If necessary, re-do adjustments 3~6.

4-1-3 Screen Voltage Adjustment

1. Use a DC multi-meter to identify RK, GK, BK. And then adjust FBT Screen VR so that the highest voltage becomes 175 Vp-p.

4-1-4 White Balance Adjustment

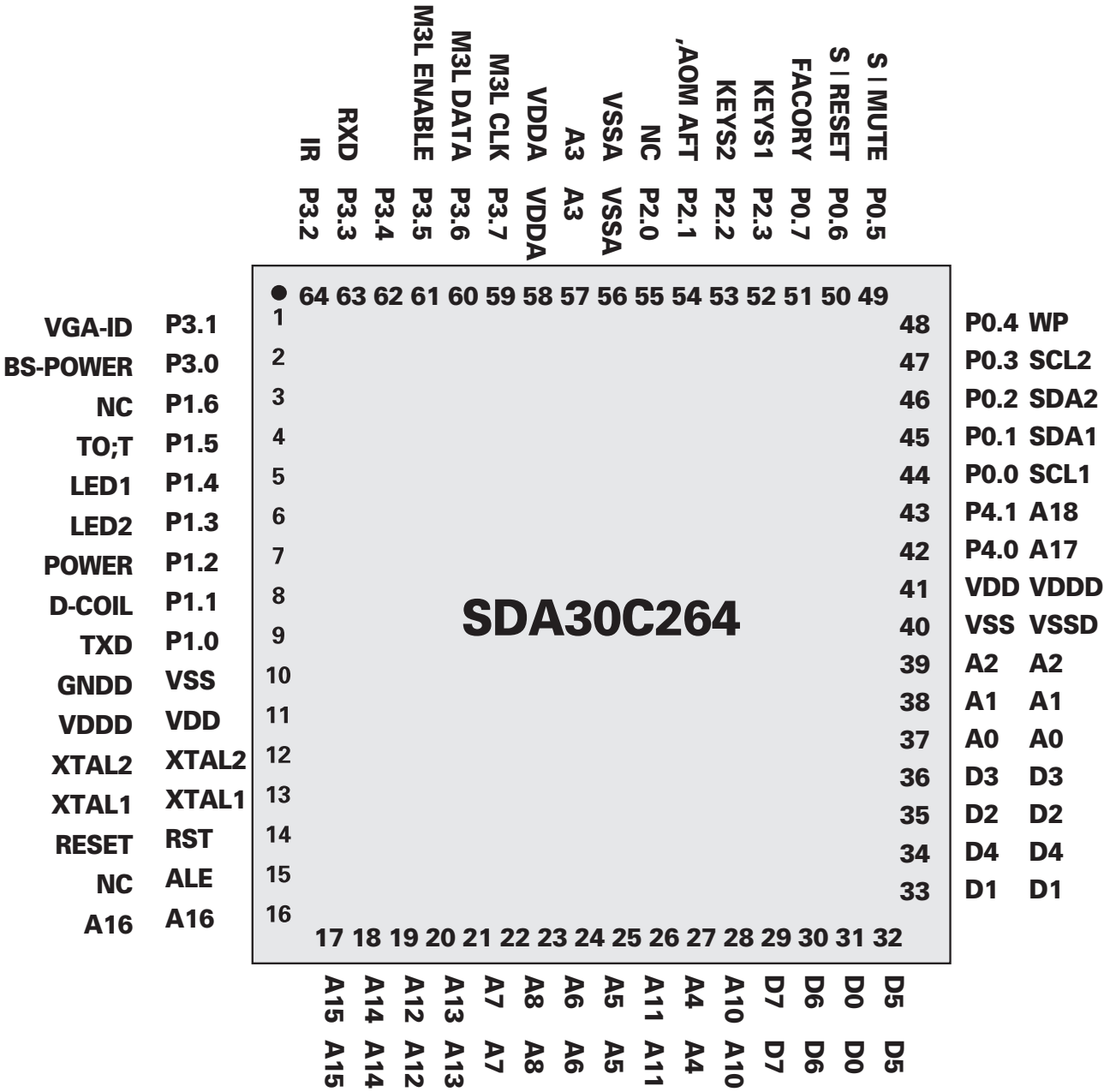
1. Select “Standard” from the menu.
2. Input an 100% White pattern.
3. In standby, press the remote-control keys in the following sequence:
   Display → Menu,Mute, Power on the TV set.
4. Warm up the TV set at least for 30 minutes.
5. Input a stair signal.
6. Use the Volume +/- buttons on the remote-control to select R Drive,G Drive,B Drive,Sub Cont.
7. Adjust Low-Light while viewing the darker side of screen.
8. Use the Volume +/- buttons on the remote-control to select Rcutoff,Gcutoff,Bcutoff,Sub Brt.
9. Adjust High-Light while viewing the brighter side of screen.
10. If not proper, re-adjust White Balance.
11. Press the Memory button to exit.

4-1-5 Sub-Brightness Adjustment

1. In standby, press the remote-control keys in the following sequence:
   Display → Menu → Mute → Power on the TV set.
2. Use the Channel Up / Down buttons to receive the sub bright adjustment signal.
3. Use the Volume +/- buttons to select SBT.
4. Press the Menu or Mute button on the remote control to adjust so that the seventh step on the right of screen cannot be seen.
5. Press the Memory button to exit.

4-2 MICOM PINNING

4-2-1 MICOM PINNING (SDA30C264)



4-2-2 MICOM MODULE PIN ALIGNMENT

PIN NO	PAL MODULE	PIN NO	PAL MODULE
1	27MHz	19	SCL2
2	GND	20	IIC STOP
3	AV-LINK	21	SDA1
4	5VB	22	SCL1
5	MAIN AFT	23	WP
6	CVBS	24	S-MUTE
7		25	S-RESET
8	TILT	26	VGA-ID
9	OSD/TTX-F/B	27	STD 5V
10	OSD/TTX-R	28	GND
11	OSD/TTX-G	29	KEYS1
12	OSD/TTX-B	30	KEYS2
13		31	IR
14	GND	32	LED1
15	VS2	33	LED2
16	HS2	34	D-COIL
17	GND	35	POWER
18	SDA2		

4-2-3 MICOM PORT ASSIGNMENT

NO	FUNCTION	ASSIGN	*IN/OUT*	ACTIVE H/L	EXPLANATION
1	P3.1	VGA-ID	*IN*	LOW	VGA SIGNAL IDENT
2	P3.0		*OUT*	LOW	-
3	P1.6	NC	-	-	-
4	P1.5(PWM)	TILT	*OUT*	PWM	TILT CONTROL
5	P1.4	LED1	*OUT*	-	ON/OFF LED CONTROL
6	P1.3	LED2	*OUT*	-	TIMER LED CONRTOL
7	P1.2	POWER	*OUT*	LOW	PICTURE ON PORT
8	P1.1	D-COIL	*OUT*	LOW	D-COIL CONTROL
9	P1.0	TXD	*OUT*	-	AV LINK CONTROL
10	VSS	GNDD	-	GND	DIGITAL GND
11	VDD	VDDD	*IN*	STD 5V	DIGITAL VCC
12	XTAL2	XTAL2	*OUT*	-	12MHz XTAL
13	XTAL1	XTAL1	*IN*	-	MICOM TESET PORT
14	RST	RESET	*IN*	LOW	NOT USED
15	ALE	NC			EPROM CONTROL ADDRESS
16	A16	A16	*IN/OUT*	-	EPROM CONTROL ADDRESS
17	A15	A15	*IN/OUT*	-	EPROM CONTROL ADDRESS
18	A14	A14	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
19	A12	A12	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
20	A13	A13	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
21	A7	A7	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
22	A8	A8	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
23	A6	A6	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
24	A9	A9	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
25	A5	A5	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
26	A11	A11	*IN/OUT*	-	EPROM CONTROL DATA/ADDRESS
27	A4	A4	IN/OUT	-	EPROM CONTROL DATA/ADDRESS
28	A10	A10	IN/OUT	-	"
29	D7	D7	IN/OUT	-	"
30	D6	D6	IN/OUT	-	"
31	D0	D0	IN/OUT	-	"
32	D5	D5	IN/OUT	-	"
33	D1	D1	IN/OUT	-	"
34	D4	D4	IN/OUT	-	"

NO	FUNCTION	ASSIGN	IN/OUT	ACTIVE H/L	EXPLANATION
35	D2	D2	IN/OUT	-	"
36	D3	D3	IN/OUT	-	"
37	A0	A0	IN/OUT	-	EPROM CONTROL ADDRESS
38	A1	A1	IN/OUT	-	EPROM CONTROL ADDRESS
39	A2	A2	IN/OUT	-	EPROM CONTROL ADDRESS
40	VSS	VSSD	-	GND	DIGITAL GND
41	VDD	VDDD	IN	STD 5V	DIGITAL VCC
42	A17/P4.0	A17	IN/OUT	-	EPROM CONTROL ADDRESS
43	A18/P4.1	A18	IN/OUT	-	EPROM CONTROL ADDRESS
44	P0.0	SCL1	IN/OUT	-	EPROM CONTROL BUS
45	P0.1	SDA1	IN/OUT	-	EPROM CONTROL BUS
46	P0.2	SDA2	IN/OUT	-	SLAVE IC CONTROL BUS
47	P0.3	SCL2	IN/OUT	-	SLAVE IC CONTROL BUS
48	P0.4	WP	OUT	HIGH	EEPROM WRITE PROTECTION
49	P0.5	S-MUTE	OUT	HIGH	MAIN SOUND AMP MUTE
50	P0.6	S-RESET	OUT	LOW	MSP RESET
51	P0.7	FACTORY	IN	LOW	BIS ADJ.MODE SELECTION
52	P2.3(A/D)	KEY1	IN	-	CH.UP,CH.DOWN,VOL.UP,VOL.DOWN,MENU
53	P2.2(A/D)	KEY2	IN	-	MUTE, TV/VIDEO
54	P2.1(A/D)	MAIN AFT	IN		
55	P2.0(A/D)	P2.0(A/D)			
56	VSSA	VSSA	-	GND	ANALOG GND
57	A3	A3	IN/OUT	-	EPROM CONTROL ADDRESS
58	VDDA	VDDA	IN	STD 5V	ANALOG VCC
59	P3.7	M3L CLK	IN/OUT	-	SDA5275 MEGATEXT IC CONTROL BUS
60	P3.6	M3L DATA	IN/OUT	-	"
61	P3.5	M3L ENABLE	OUT	-	"
62	P3.4		IN	HIGH	
63	P3.3	RXD	IN		AV LINK
64	P3.2	IR	IN	-	REMOTE CONTROL SIGNAL INPUT

4-2-4 MICOM FACTORY MODE OPTION BYTE

Item	OSD	CIS	Asia/Midde East	Remark
0	CRT	4:3	4:3	-CPT Option(Wide/4:3):P.Size format, WSS Related Option
1	Language Group	Europe	Asia	-User Optional Language Group Setting(Europe/Asia) -Refer to "Language Group Table"
2	Lgnguage	Russia	By Destination	-Select the language of destination from Language Group * Note: Countermeasute to prevent IRAN from smuggling Once Arabic(Persian)has been selected,the user can't select Persian(Arabic)
3	ATM	ON	OFF	-ON: ATM, OFF: Auto search
4	Scart/Rca	Scart	Rca	-SCART: AV-Link,AV Setup Menu, Scart jack switching -RCA: RCA Jack switching, DVD
5	VGA	ON	ON	-Presence of VGA(ON/OFF)
6	Plug&Play	ON	ON	Application of Dolby Prologic(ON/OFF)
7	Dolby prg	ON	ON	-Application of Plug & Play (ON/OFF)
8	Pinp	CS	ON	-Application of Pinp(ON/OFF)
9	Cw/Cs	ON	CS	-CW/CS Tuner switching option
10	Lna	ON	ON	-Application of LNA(Pinp model) (ON/OFF)
11	Child Lock	ON	ON	-Application of Child Lock (ON/OFF)
12	HP jack ident	ON	ON	-ON:The main sound is cut off after identigying the headphome jack -OFF:The headphome jack ident PIN of MICOM is used as an IIC STOP PIN. The main sound is not cut off
13	Top ttx	OFF	OFF	-Set only the countries requesting TOP patent so that TOP TTX can be available(Countries using TOP:Germany,Austria,Italy,Swiss)
14	High Deviation	ON	ON	-Solve the Sound Stop problem by tutning High Deviation On for the countries with SOUND over modulation
15	TTX group	Russia	By Destination	-Grouping the TTX Language by Region:Refer to a separate TABLE
16	Carrier mute	OFF	OFF	-For Italy Only (Option)

4-3 FACTORY MODE CONTROL

4-3-1 Factroy Mode Data Control

1. Enter & Concel the Factory Mode
   1) Usual Remote Control
   Enter : PICTURE OFF -> DISPLAY KEY -> MENU KEY -> MUTE KEY
   (Press each remote control key with in 3 seconds)
   Cannel : POWER OFF -> ON
   2) Factory Remote Control
   Enter : DISPLAY KEY -> FACTORY KEY
   (Press each remote control key with in 3 seconds)
   Cannel : POWER OFF -> ON
   Press the FACTORY key twice at intervals of at lease 1 second.
   (Enter the AGING Mode once)
   3) Set Value When Entering the Factory Mode
   - Picture Mode & Sound Mode are set to the standard data
   4) Adjustments
   - CH. UP/DOWN Key : Use to select the item you want
   - VOLUME UP/DOWN Key : Increases or decreases the value of data.
   - MENU Key : Use to save the current set value in EEPROM and exit to the upper mode.
   - Use the DIGIT Key to switch channels
   - Use the TV/VIDEO Key th conver to the AV Mode

4-4 FACTORY ADJUSTMENT DATA

VIDEO ADJUSTMENT
Y.C-DELAY
DEFLECTION NORMAL
DEFLECTION VGA
DEFLECTION NORMAL[1080i] ==> CHINA ONLY
DEFLECTION NORMAL[480P] ==> CHINA ONLY
PICT. INPROVE [PAL]
PICT. INPROVE [NTSC]
PICT. INPROVE [VGA]
PICT. INPROVE [SECAM]
PICT. INPROVE [DVD]
PICT. INPROVE [480P] ==> CHINA ONLY
PICT. INPROVE [1080i] ==> CHINA ONLY
P.STD CHANGE
OPTION BYTE
RESET

VIDEO ADJUSTMENT

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS34Z4HF9X/XTT
00	R Drive	-	0 ~ 63	32	32
01	B Drive	-	0 ~ 63	32	32
02	G Drive	FIX	0 ~ 63	32	32
03	Gamma	FIX	0 ~ 15	8	8
04	R Cutoff	-	0 ~ 63	20	20
05	G Cutoff	FIX	0 ~ 63	20	20
06	B Cutoff	-	0 ~ 63	20	20
07	Sub Cont	FIX	0 ~ 15	10	6
08	Sub Bri	FIX	0 ~ 63	38	32
09	Sub Color	FIX	0 ~ 15	11	11
10	Sub Tint	FIX	0 ~ 15	7	7
11	V Peaking	FIX	0 ~ 12	8	8
12	Ttx Cont	FIX	0 ~ 15	8	8
13	Ttx Bright	FIX	0 ~ 63	32	32
14	Pip Cont	FIX	0 ~ 15	15	15
15	Pip Bright	FIX	0 ~ 15	7	7

Y.C-DELAY

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS34Z4HF9X/XTT
00	PAL-B/G	FIX	0 ~ 15	7	7
01	PAL-D/K/L	FIX	0 ~ 15	9	9
02	PAL-I	FIX	0 ~ 15	9	9
03	SECAM-B/G	FIX	0 ~ 15	6	6
04	SECAM-D/K/L	FIX	0 ~ 15	7	7
05	NTSC	FIX	0 ~ 15	8	8
06	PAL-AV	FIX	0 ~ 15	7	7
07	SECAM-AV	FIX	0 ~ 15	4	4
08	NTSC-AV	FIX	0 ~ 15	6	6
09	DVD	FIX	0 ~ 15	9	9

DEFLECTION NORMAL

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	P.V-Size	-	-128 ~ 127	-43	-40
01	P.V-Sft	-	-128 ~ 127	-15	0[
02	P.V-Lin	-	-128 ~ 127	-16	-5
03	P.S-Corr	FIX	-128 ~ 127	6	-39
04	P.EW-Wth	-	-128 ~ 127	9	9
05	P.EW-Pbl	-	-128 ~ 127	-77	-66
06	P.H-Sft	-	-64 ~ 63	22	22
07	P.EW-Tpz	-	-128 ~ 127	-76	-58
08	P.Bow	-	-128 ~ 127	-6	0
09	P.Anale	-	-128 ~ 127	-25	-10
10	P.EW-UpCr	-	-128 ~ 127	23	25
11	P.EW-LoCr	-	-128 ~ 127	-43	-40[
12	P.Hor-EHT	FIX	0 ~ 255	30	30
13	P.Ver-EHT	FIX	0 ~ 255	200	200
14	P.Int.Vol.Ref	FIX	-16 ~ 15	0	0
15	P.Hsync Delay	FIX	-128 ~ 127	10	10
16	P.PHP	-	0 ~ 255	22	22
17	P.PVP	-	0 ~ 255	30	30
18	P.PHS	FIX	0 ~ 255	0	0
19	P.PVS	FIX	0 ~ 255	0	0

DEFLECTION VGA

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	V-Size	-	-128 ~ 127	-105	-110
01	V-Sft	-	-128 ~ 127	-19	-19
02	V-Lim	-	-128 ~ 127	-27	-27
03	S-Corr	FIX	-128 ~ 127	-28	-28
04	EW-Wth	-	-128 ~ 127	-25	-27
05	EW-Pbl	-	-128 ~ 127	-91	-78
06	H-Sft	-	-64 ~ 63	13	13
07	EW-Tpz	-	-128 ~ 127	-51	-51
08	Bow	-	-128 ~ 127	0	0
09	Angle	-	-128 ~ 127	0	0
10	EW-UpCr	-	-128 ~ 127	46	46
11	EW-LoCr	-	-128 ~ 127	32	32
12	Hor-EHT	FIX	0 ~ 255	12	12
13	Ver-EHT	FIX	0 ~ 255	42	200
14	Intavol. Ref.	FIX	-16 ~ 15	0	0
15	Hsync Delay	FIX	-128 ~ 127	12	12

DEFLECTION NORMAL[1080i] => CHINA ONLY

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	1080. V-Size	-	-128 ~ 127	-80	-83
01	1080. V-Sft	-	-128 ~ 127	-32	-21
02	1080. V-Lim	-	-128 ~ 127	-28	-17
03	1080. S-Corr	FIX	-128 ~ 127	6	-39
04	1080. EW-Wth	-	-128 ~ 127	22	27
05	1080. EW-Pbl	-	-128 ~ 127	-70	-59
06	1080. H-Sft	-	-64 ~ 63	-14	-20
07	1080. EW-Tpz	-	-128 ~ 127	-72	-54
08	1080. Bow	-	-128 ~ 127	-1	5
09	1080. Angle	-	-128 ~ 127	-10	5
10	1080. EW-UpCr	-	-128 ~ 127	9	11
11	1080. EW-LoCr	-	-128 ~ 127	-51	-48
12	1080. Hor-EHT	FIX	0 ~ 255	30	30
13	1080. Ver-EHT	FIX	0 ~ 255	200	200
14	1080. Intavol. Ref.	FIX	-16 ~ 15	0	0
15	1080. Hsync Delay	FIX	-128 ~ 127	11	11

DEFLECTION NORMAL[408p] => CHINA ONLY

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	480. V-Size	-	-128 ~ 127	-47	-44
01	480. V-Sft	-	-128 ~ 127	-9	-5
02	480. V-Lim	-	-128 ~ 127	-16	-5
03	480. S-Corr	FIX	-128 ~ 127	6	-39
04	480. EW-Wth	-	-128 ~ 127	12	12
05	480. EW-Pbl	-	-128 ~ 127	-79	-63
06	480. H-Sft	-	-64 ~ 63	-25	-25
07	480. EW-Tpz	-	-128 ~ 127	-43	-25
08	480. Bow	-	-128 ~ 127	0	0
09	480. Angle	-	-128 ~ 127	-8	0
10	480. EW-UpCr	-	-128 ~ 127	7	-37
11	480. EW-LoCr	-	-128 ~ 127	-17	-39
12	480. Hor-EHT	FIX	0 ~ 255	30	30
13	480. Ver-EHT	FIX	0 ~ 255	200	200
14	480. Intavol. Ref.	FIX	-16 ~ 15	0	0
15	480. Hsync Delay	FIX	-128 ~ 127	4	4

PICTURE IMPROVE[PAL]

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	LIMIT_LEVEL	FIX	0 ~ 3	2	2
01	SYSTEM	FIX	0 ~ 3	2	2
02	CLP_MSK	FIX	0 ~ 3	0	0
03	ABL_MODE	FIX	0 ~ 3	3	3
04	ABL_TH	FIX	0 ~ 3	1	1
05	DTV_SYNC	FIX	0 ~ 255	9	9
06	CR_OFFSET1	FIX	0 ~ 15	7	7
07	CB_OFFSET1	FIX	0 ~ 15	7	7
08	COLOR_OFF	FIX	0 ~ 1	0	0
09	CTI-LEVEL	FIX	0 ~ 3	1	1
10	R-Y/R	FIX	0 ~ 15	2	2
11	R-Y/B	FIX	0 ~ 15	15	15
12	G-Y/R	FIX	0 ~ 15	7	7
13	G-Y/B	FIX	0 ~ 15	0	0
14	LRGB2_LEVEL	FIX	0 ~ 15	12	12
15	PABL_LEVEL	FIX	0 ~ 15	14	14
16	BLK_BOTTOM	FIX	0 ~ 15	0	0
17	SUB_SHP	FIX	0 ~ 3	2	2
18	SHP_FO	FIX	0 ~ 3	2	2
19	PRE_OVER	FIX	0 ~ 3	3	3
20	LTI_LEVEL	FIX	0 ~ 3	1	1
21	VM_LEVEL	FIX	0 ~ 3	3	3
22	VM_DELAY	FIX	0 ~ 3	3	3
23	DC_TRAN	FIX	0 ~ 3	3	3
24	D_PIC	FIX	0 ~ 3	3	3
25	DCTI	FIX	0 ~ 255	8	8
26	BPF_LPF	FIX	0 ~ 255	73	73
27	HPF_CORING	FIX	0 ~ 255	9	9

PICT. IMPROVE[NTSC]

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	R-Y/R	FIX	0 ~ 15	2	2
01	R-Y/B	FIX	0 ~ 15	15	15
02	G-Y/R	FIX	0 ~ 15	7	7
03	G-Y/B	FIX	0 ~ 15	0	0

PICT. IMPROVE[VGA]

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00		FIX	0 ~ 3	2	2
01	R-Y/R	FIX	0 ~ 15	2	2
02	R-Y/B	FIX	0 ~ 15	15	15
03	G-Y/R	FIX	0 ~ 15	7	7
04	G-Y/B	FIX	0 ~ 15	0	0
05	SUB_SHP	FIX	0 ~ 3	0	0
06	SHP_FO	FIX	0 ~ 3	0	0
07	V_PRE_OVER	FIX	0 ~ 3	0	0
08	LTI_LEVEL	FIX	0 ~ 3	0	0
09	VM_LEVEL	FIX	0 ~ 3	0	0
10	VD_DELAY	FIX	0 ~ 3	0	0
11	DC_TRAN	FIX	0 ~ 3	3	3

PICT. IMPROVE[SECAM]

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	CR_OFFSET1	FIX	0 ~ 15	14	14
01	CB_OFFSET1	FIX	0 ~ 15	3	3
02	R-Y/R	FIX	0 ~ 15	2	2
03	R-Y/B	FIX	0 ~ 15	15	15
04	G-Y/R	FIX	0 ~ 15	7	7
05	G-Y/B	FIX	0 ~ 15	0	0

PICT. IMPROVE[DVD]

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	CTI-Level	FIX	0 ~ 3	1	1
01	DCTI	FIX	0 ~ 255	0	0
02	BPF-LPF	FIX	0 ~ 255	74	74
03	HFP-Coring	FIX	0 ~ 255	10	10

PICT. IMPROVE[408p] => CHINA ONLY

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	480_SYSTEM	FIX	0 ~ 3	3	3
01	480_CLP_MSK	FIX	0 ~ 3	0	0
02	480_DTV_SYNC	FIX	0 ~ 255	203	203
03	480_CTI_LEVEL	FIX	0 ~ 3	1	1
04	480_R-Y/R	FIX	0 ~ 15	2	2
05	480_R-Y/B	FIX	0 ~ 15	15	15
06	480_G-Y/R	FIX	0 ~ 15	7	7
07	480_G-Y/B	FIX	0 ~ 15	0	0
08	480_SUB_SHP	FIX	0 ~ 3	3	3
09	480_SHP_FO	FIX	0 ~ 3	2	2
10	480_PRE_OVER	FIX	0 ~ 3	3	3
11	480_LTI-LEVEL	FIX	0 ~ 3	1	1
12	480_VM_LEVEL	FIX	0 ~ 3	2	2
13	480_VM_DELAY	FIX	0 ~ 3	2	2
14	480_DC_TRAN	FIX	0 ~ 3	3	3
15	480_D_PIC	FIX	0 ~ 3	3	3

PICT. IMPROVE[1080i] => CHINA ONLY

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	1080_SYSTEM	FIX	0 ~ 3	3	3
01	1080_CLP_MSK	FIX	0 ~ 3	0	0
02	1080_DTV_SYNC	FIX	0 ~ 255	203	203
03	1080_CTI_LEVEL	FIX	0 ~ 3	1	1
04	1080_R-Y/R	FIX	0 ~ 15	2	2
05	1080_R-Y/B	FIX	0 ~ 15	15	15
06	1080_G-Y/R	FIX	0 ~ 15	7	7
07	1080_G-Y/B	FIX	0 ~ 15	0	0
08	1080_SUB_SHP	FIX	0 ~ 3	3	3
09	1080_SHP_FO	FIX	0 ~ 3	2	2
10	1080_PRE_OVER	FIX	0 ~ 3	3	3
11	1080_LTI-LEVEL	FIX	0 ~ 3	1	1
12	1080_VM_LEVEL	FIX	0 ~ 3	2	2
13	1080_VM_DELAY	FIX	0 ~ 3	2	2
14	1080_DC_TRAN	FIX	0 ~ 3	3	3
15	1080_D_PIC	FIX	0 ~ 3	3	3

P.STD CHANGE

Item	OSD	Adjust	Range	CS29Z4HF9X/XTT	CS29Z4HF9X/XTT
00	STD_BRIGHT	FIX	0 X 6[7] OB	32	32
01	STD_CONTRAST	FIX	0 X 6[7] OC	41	41
02	STD_COLOR	FIX	0 X 6[7] OD	35	35
03	STD_SHARPNESS	FIX	0 X 6[7] OE	32	32
04	STD_TINT	FIX	0 X 6[7] OF	0	0
05	STD_COLORTONE	FIX	0 X 6[7] 10	0	0
06	SPORTS_BRIGHT	FIX	0 X 6[7] 11	32	32
07	SPORTS_CONTRAST	FIX	0 X 6[7] 12	57	57
08	SPORTS_COLOR	FIX	0 X 6[7] 13	35	35
09	SPORTS_SHARPNESS	FIX	0 X 6[7] 14	41	41
10	SPORTS_TINT	FIX	0 X 6[7] 15	0	0
11	SPORTS_COLORTONE	FIX	0 X 6[7] 16	3	3
12	MILD_BRIGHT	FIX	0 X 6[7] 17	35	35
13	MILD_CONTRAST	FIX	0 X 6[7] 18	28	28
14	MILD_COLOR	FIX	0 X 6[7] 19	32	32
15	MILD_SARPNESS	FIX	0 X 6[7] 1A	25	25
16	MILD_TINT	FIX	0 X 6[7] 1B	0	0
17	MILD_COLORTONE	FIX	0 X 6[7] 1C	1	1
18	NATURAL_BRIGHT	FIX	0 X 6[7] 1D	32	32
19	NATURAL_CONTRAST	FIX	0 X 6[7] 1E	63	63
20	NATURAL_COLOR	FIX	0 X 6[7] 1F	38	38
21	NATURAL_SHARPNESS	FIX	0 X 6[7] 20	48	48
22	NATURAL_TINT	FIX	0 X 6[7] 21	0	0
23	NATURAL_COLORTONE	FIX	0 X 6[7] 22	4	4
24	VGA_BRIGHT	FIX	0 X 6[7] 23	15	32
25	VGA_CONTRAST	FIX	0 X 6[7] 24	15	32
26	RGB_COLOR	FIX	0 X 6[7] 27	6	6
27	RGB_COLOR_L	FIX	0 X 6[7] 28	100	100
28	RGB_TINT	FIX	0 X 6[7] 29	0	0
29	RGB_BRI_CONT	FIX	0 X 6[7] 2B	27	27
30	RGB_BRI_CONT_L	FIX	0 X 6[7] 2C	68	68
31	FB_GAIN	FIX	0 X 6[7] 2D	144	144
32	SLICER_LEVEL	FIX	0 X 6[7] 2F	15	15

OPTION BYTE

Item	OSD	O/Byte : 00 f7 026
00	CRT	4:3
01	LANGUAGE GROUP	Asia
02	LANGUAGE	Chiness
03	ATM	Off
04	Scart/RCA	RCA
05	VGA	On
06	Plug & Play	On
07	Dolby Prologin	On
08	PIP	On
09	CW/CS	CS
10	LNA	On
11	Child-Lock	On
12	HP Jack Ident	On
13	TOP TTX	Off
14	High Deviation	Off
15	TTX Group	W-Europe
16	Carrier Mute	Off
17	P.Standard	Natural
18	DTV	On

❊ CRT : 1. 4 : 3 2. WIDE(16:9)
❊ Language Group : 1. Europe 2. Asia
❊ Europe Language Select
; Greece, Netherland, Germany, CIS, Rumania, Bulgaria, Sweden, Spain, Yougslavia, Italy, Czecho, Croatia, Turkey, Portugal, Poland, France, Hungary, England

❊ Asia Language Select
; U.S.A, France, Malaysia, Indonesia, Arab, Persia, Pakistan,
; MICOM SIM-810HC VERSION => Chiness Only

❊ ATM Select
ON : Greece, Netherland, Germany, CIS, Rumania, Bulgaria, Sweden, Spain, Yougslavia, Italy, Czecho, Croatia, Turkey, Portugal, Poland, France, Hungary, England
OFF : Others Country

❊ TOP TTX Select
ON : Germany
OFF : Others Country

❊ TTX Group
; W-Europe, E-Europe, Russian, Arabic, Hebrew

4-5 3 Speed, Aging mode & Reset mode

4-5-1 3-Speed

1. 3-Speed
   1) Speed up Analog Conrtol three times and Time Speed sixty times to let line productivity be improved Analog Control.
   2) Enter
   - Display + 3Speed Key
   3) Cancel
   - The 3-Speed mode is cancelled in Master Power Off
   - Press the 3Speed Key
   4) OSD : The message “3-SPEED” appears on the center of screen
   5) No Signal : No AUTO OFF

2. Aging Mode
   1) Enter : DISPLAY KEY -> FACTORY KEY (FACTORY MODE)
   -> FACTORY KEY (AGING MODE)
   - When the AGING mode is entered, the OSD’s are displayed at 100% SIZE WHITE.
   - Mute SOUND
   2) Cancel
   - FACTORY remote conrtol -> Press the FACTORY Key
   - LOCAL KEY -> Use the Key MATRIX (Panel Key)
   - The AGING mode remains even in MASTER S/W OFF -> ON
   Cancel the AGING mode only in the above two cases.

3. Factory Reset
   1) Run “Reset” on the Factory Menu.
   2) Initialize the other user control data except the items that are adjusted in the Factory Mode.
   3) Power Off in standby mode.

4-5-2 Bus Stop Mode & Remote Control Adjustment

1. Bus Stop Mode (Use a Micom Stop Pin)
   1) Enter the Bus Stop Mode within 200ms when 12c Stop Port is acknowledaged “LOW”.
   2) Settings when entering.
   - Set the screen mode “STANDARD”.
   - Set Bus Line Free.
   - Cancal the Bus Stop Mode when 12c Stop Port is acknowledged “High”.
   3) Setting when cancelling
   - Re-load data from EEPROM and then re-set the appropriate IC.

2. Remot Control Adjustment Mode (Factory Auto Adjustment)
   1) Enter the Remote Control Adjustment Mode when the remote control auto adjustment code is input.
   2) Settings when entering.
   - Set the screen mode “STANDARD”
   - Set Bus Line Free.
   3) Cancel the Remote Control Adjustment Mode when the usual key code is input.
   4) When the code is input, write data in both E2PRM and the appropriate IC within 20ms.
   Interval between Code Inputs : 30ms

4-6 INITIALIZATION DATA DURING RESET

Item	Intialization Data	Item	Initialization Data
Volume	10step	TV Power	Stand by
Balance	Center	Blue Screen	On
Main,Pip Channel	Custom	TINT	Center
Picture Standard	(Set Value:Standard)	Still Picture	Cancel
Sound Standard	Nautral	AV Setup	Ext2,Ext3:RF
Add/erase	All Channel erased	Time	- - : - -
Channel Sort	Erased	On/Off Time	- - : - -
LNA	All Channel Off	H/P Volume	10 Step
Color System	Auto	H/P Bal.,Tbl,Bass	Center
PIP Position	Right under	Programe naming	All Channel Erased(*)
Fine Tune	Erased	Audio out	Volume out
Language	Option byte Selection	Int.mute	Off
Pip,Main Source	RF	Center,Rear Volume	Center
Digital N/R	Off	Zoom Lift	Center
TILT	Center	PC Screen Shift	Center
P-Size	Wide:auto,4:3:Normal	Country	Austria
PIP-Size	Big		
TTX Contrast	Factory value		
Child lock	All Channel off		
Plug & Play	Option byte Selection		
Surround Mode	Off		
Pro Logic	Normal		

4-7 CHASSIS FUNTION

	FUNTION	PAL
PICTURE	LINE FLICKERLESS	YES
	LARGE AREA FLICKERLESS	YES
	MOTION DETECTOR	YES
	MAIN STILL PICTURE	YES
	ZOOM FUNCTION	NORMAL -> 16:9 -> ZOOM
	(4:3,WIDE CRT OPTION)	AUTO WIDE->PANORAMA->4:3->16:9->ZOOM1->ZOOM2
	ZOOM LIFT	YES
	DIGITAL N/R	YES
	COMB FILTER	4H
	CTI	DIGITAL CTI
	SCAN MODE	NATURAL SCAN -> DIGITAL SCAN -> PORGRESSIVE SCAN
	P-STD	CUSTOM->STANDARD->SPORTS->MILD->NATURAL
	COLOR TONE	NORMAL -> WARM1- > WARM2 -> COOL1 -> COOL2
	DYNAMIC-FOCUS	YES
	VM	YES
	TILT CONTROL	YES
	VGA	YES
	DVD	RCA JACK MODEL ONLY -> YUV MODE
PIP	MULTI PIP	YES
	LNA ON/OFF	YES
	SWAP,ROTATE,SIZE,SCAN	YES

	FUNTION	PAL
FUNTION	ATM	ATM(EU)
	PLUG & PLAY	YES
	AV LINK	SCART JACK MODEL ONLY (SCART1)
	TTX	MEGA TEXT
	OSD TYPE	OSG
	SLEEP TIMER	YES
	ON/OFF TIMER	YES
	CHILD LOCK	YES
	PROGRAMMABLE CH.	100 CH. MENORY
	TUNING SYSTEM	PROGRAMMABLE F/S
	SORT & NAME	YES
	INFORMATION	YES(NAME,SOUND MODE,CHILD LOCK)
	ADD/ERASE	YES(CHANNEL SKIP)
SOUND	DOLBY PROLOGIC	YES
	A2 STEREO	YES
	EQUALIZER	YES
	NICAM STEREO	YES
	OUTPUT (MPO)	MAIN:12+12W, SUR:12+12W, CENTER:12W
	S-STD	CUSTOM->STANDARD->MUSIC->MOVIE->SPEECH
	HEADPHONE VOLUME CONTROL	YES
EXT JACK	FRONT	1 S-VHS,1RCA INPUT,1HEADPHONE,1 VGA
	REAR	SCART JACK MODEL: 1RF,3SCART,DOLBY JACK
		RCA JACK MODEL:1RF,1 S-VHS,3RCA IN, 1DVD IN, 1 MONITOR OUT, DOLBY JACK

4-8 PCF9591 PORT ASSIGNMENT (JACK IDENT)

PIN NO	FUN	ASSIGN	SCART JACK OPTION IDENT VOLTAGE(V)			RCA JACK MODEL IDENT VOLTAGE(V)			
			0~1.5	1.6~3.4	3.5~5.0	0~2.2	2.3~2.7	2.8~4.0	4.1~5.0
1	AINO	SC1-ID(AV1/DVD-ID)	NOT CON.	WIDE MODE	4:3 MODE	NOT CON.	DVD	AV1	ALL CON
2	AIN1	SC2-ID(AV2/DVD-ID)	NOT CON.	WIDE MODE	4:3 MODE	AV2 SVHS		NOT CON.	AV2
3	AIN2	SC3-ID(AV3)	NOT CON.	WIDE MODE	4:3 MODE	NOT CONNECTION		AV3	
4	AIN3	FAV-ID/FS-ID				FRONT-SVHS		NOT CON.	F-VIDEO
5	A0	GND	IC ADDRESS SLECTION						
6	A1	GND							
7	A2	GND							
8	VSS	GND	DIGITAL GND						
9	SDA	SDA2	IIC CONTROL BUS						
10	SCL	SCL2							
11	OSC	OSC							
12	EXT	GND	EXT/INT OSC CONTROL						
13	AGND	AGND	ANALOG GND						
14	VREF	VREF	-						
15	AOUT	D/A OUT	NOT USED						
16	VDD	VDD	5V						

4-9 LOCAL KEY ASSIGNMENT

1. Local(Pannel) Key List

- LOCAL MENU : Main Menu Control
- CH + : Channel Up & Menu Control
- CH - : Channel Down & Menu Control
- VOLUME + : Volume Up & Menu Control
- VOLUME - : Volume Down & Menu Control
- TV / VIDEO : TV / VIDEO MODE CHANGE

2. Local Key (8 Bit ADC)

KEY1	KEY NAME	KEY NAME	CH. DOWN	CH. UP	VOL.DOWN	NOT OPER
	VOLTAGE	VOLTAGE	0V~0.62V	0.93V~1.55V	1.86V~2.5V	3.74V~5.00V
KEY2	KEY NAME	KEY NAME		LOCAL MENU	TV VIDEO	NOT OPER
	VOLTAGE	VOLTAGE	0V~0.62V	0.93V~1.55	1.86V~2.5V	3.74V~5.00V

* Language Group

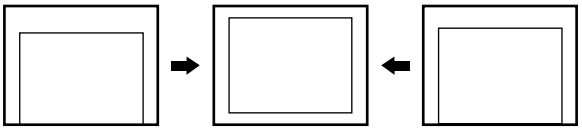
NO	Europe	Asia	Remark
1	English	English	
2	Bulgalian	Arabic	
3	Croatioan	French	
4	Czech	Indonesian	
5	Dutch	Malay	
6	French	Persian	
7	German		
8	Greek		
9	Hungarian		
10	Italian		
11	Polish		
12	Portuguese		
13	Rumanian		
14	Russian		
15	Spanish		
16	Swedish		
17	Turkish		
18	Yogo		

* TTX Language Groutp

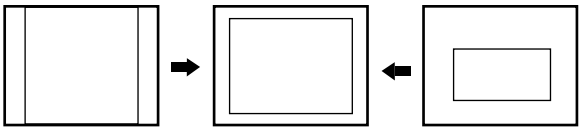
NO	X22 line					Factory mode TTX Group			
	C14	C13	C13	W-Europe	E-Europe	Russian	Arab	Ireland	Hebrew
0	0	0	0	English	Polish	Polish	English/ Arabic	English	English
1	0	0	1	French	Russian	Russian	French/ Arabic	French	French
2	0	1	0	Swedish/ Finnish/ Danish	Hungarian	Estonian	Thai	Swedish/ Finnish/ Danish	Swedish/ Finnish/ Danish
3	0	1	1	Turkish	Czech/ Slovak	Czech/ Slovak	Turkish	Turkish	Turkish
4	1	0	0	German/ Dutch/ Flemish	German/ Dutch/ Flemish	German/ Dutch/ Flemish	German/ Dutch/ Flemish	German/ Dutch/ Flemish	German/ Dutch/ Flemish
5	1	0	1	Spanish/ Portuguese	Slovenian/ Serbo	Ukranian	Spanish/ Portuguese	Icelandic	Hebrew/ Arabic
6	1	1	0	Italian	Lithuanian	Lettish	Italian	Italian	Italian
7	1	1	1	Greek	Rumanian	Rumanian	Arabic	Greek	Rumanian

4-10 Screen Change (I2C Bus Geometric Adjustment)

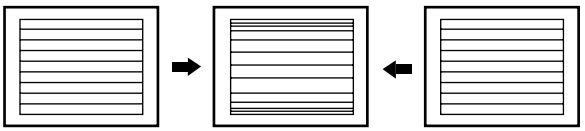
1 V - SHIFT



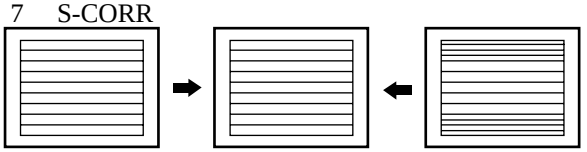
6 V - SIZE



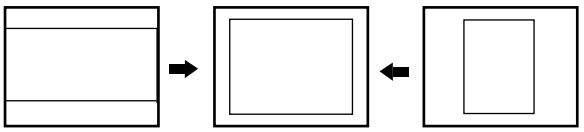
2 V - LIN



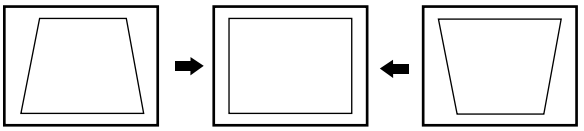
7 S-CORR



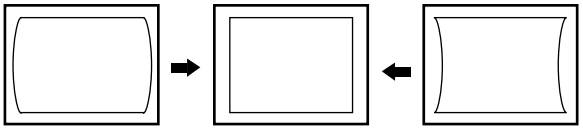
3 HEW- WITH



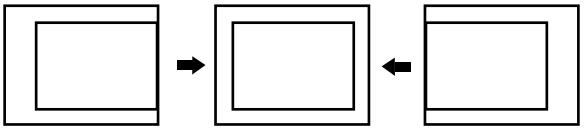
8 H EW-TRAPIZIUM



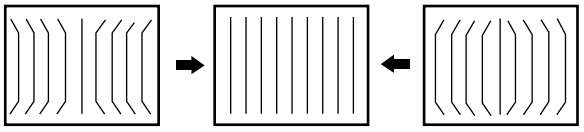
4 H EW-PARABOLA



9 H SHIFT



5 H BOW



MEMO